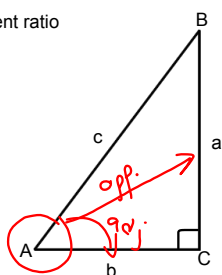


7-4 Trigonometry

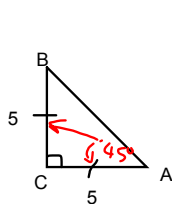
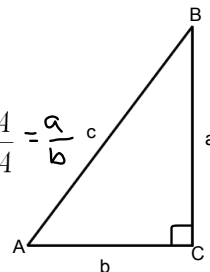
The tangent ratio

Side adjacent to $\angle A$ b Side opposite of $\angle A$ a

The tangent ratio

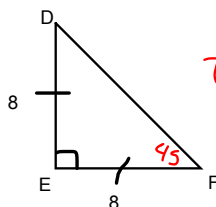
$$\tan A = \frac{\text{side opposite } \angle A}{\text{side adjacent } \angle A} = \frac{a}{b}$$

$$\tan A = \frac{\text{opp.}}{\text{adj.}} = \frac{a}{b}$$

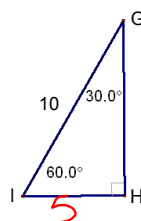


$$\tan 45 = \frac{5}{5}$$

$$\tan 45 = 1$$



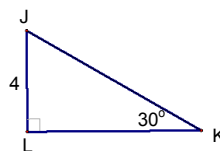
$$\tan 45 = \frac{8}{8} = 1$$



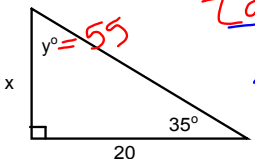
$$\tan 30 = \frac{5}{5\sqrt{3}}$$

$$\tan 30 = .577$$

$$5 \div (5\sqrt{3})$$



Every ^{acute} angle has a specific tangent value



$$\tan 35 = \frac{x}{20}$$

$$20 \cdot \tan 35 = x$$

$$14.0 \approx x$$

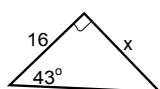
$$\tan 55 = \frac{20}{x}$$

$$x \cdot \tan 55 = 20$$

$$\frac{x \cdot \tan 55}{\tan 55} = \frac{20}{\tan 55}$$

$$x \approx 14.0$$

90
-35
—
55
y = 55



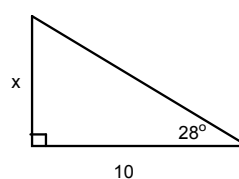
$$\tan 43 = \frac{x}{16}$$

$$x = 16 \cdot \tan 43$$

$$x \approx 14.9$$

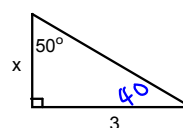
Do:

1.



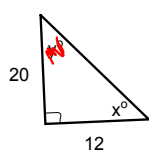
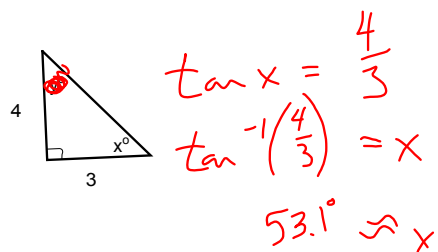
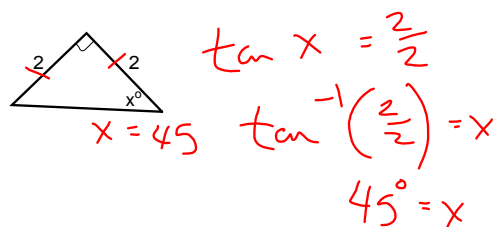
$$x \approx 5.3$$

2.

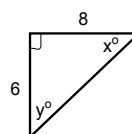


$$x \approx 2.5$$

You can also find the angle if you have the legs.

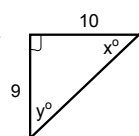


$\tan x = \frac{20}{12}$
 $x \approx 59.0^\circ$



Do:

1.



2.

